



SIMPLIFIED



POULTRY



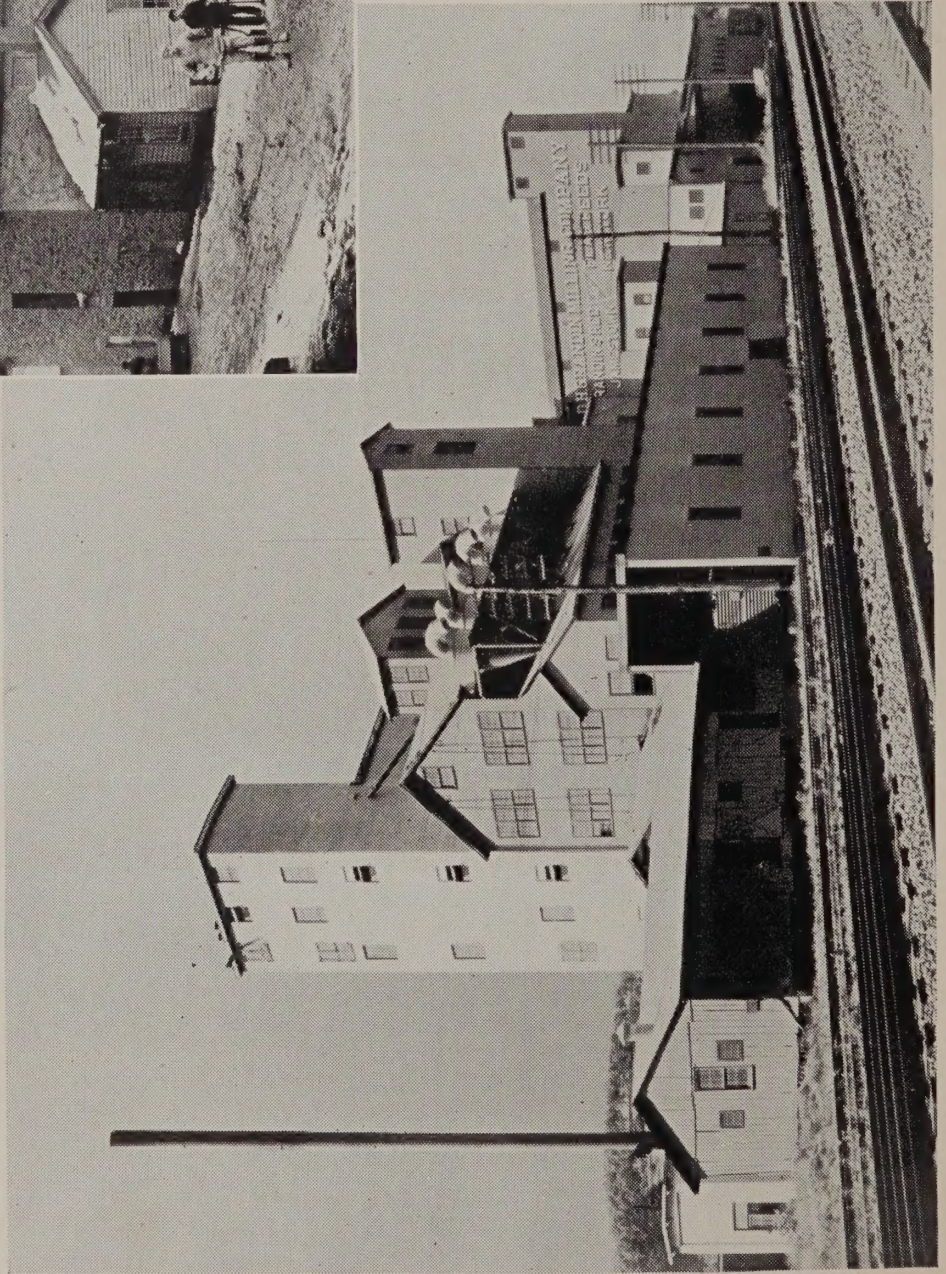
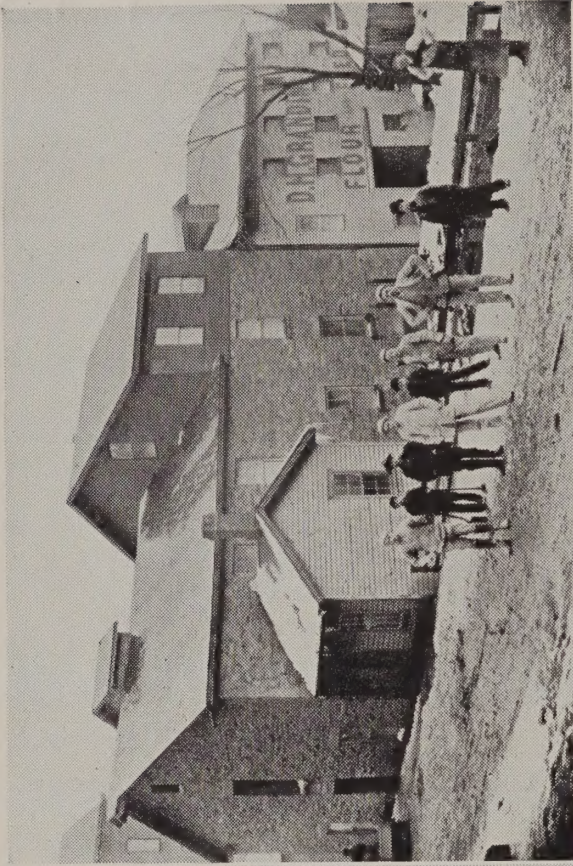
KEEPING

PUBLISHED BY

POULTRY SERVICE DEPARTMENT

D. H. GRANDIN MILLING CO., JAMESTOWN, N. Y.

THE "OLD STONE MILL"
WHERE WE STARTED
IN BUSINESS.



OUR PLANT
AS IT IS
TODAY.

IN EXPLANATION

While certain fundamental principles of poultry raising do not change, *every* year new ideas relative to breeding, management, and treatment of diseases come to the front. Such being the case, we believe that it is for the good of our customers, and ourselves, that from time to time we revise our booklet SIMPLIFIED POULTRY KEEPING. Thus, we are enabled to pass along this information, or such part of it as will help our customers to get a tangible profit from their investment, and a *reasonable* return for their labor.

We carefully sift the new information and pass on to our customers those ideas which our tests have proven to be *practical*. We don't want to direct them on the wrong road. It costs too much to retrace steps and rectify mistakes.

The new ideas in regard to nutrition which our own experience prove to be *right* we incorporate in GRANDIN'S POULTRY FEEDS.

It is difficult for the scientist to talk in terms that the average poultryman is able to understand. If his valuable findings are to be put to practical use, somewhere in the program there must be an interpreter. We are glad to act in that capacity. In so doing we try to harmonize his findings with the laws of Nature and put them in simple, understandable language.

We have no intention of attempting to tell any poultryman how to run his business. We offer suggestions as to flock management which are the results of our experiences and observations. These are embodied in a definite workable program which we call THE GRANDIN WAY. We are aware of the fact that every poultryman has his own ideas, which he is going to try out. We take into consideration, also, the fact that every poultryman has individual problems to solve. In this edition of SIMPLIFIED POULTRY KEEPING, we present a system of poultry management which *we know will work out in the long run*. The poultryman whose program has failed should try THE GRANDIN WAY.

What will happen in the poultry industry in the future no one can foresee. However, we may be sure that there are certain essential, underlying principles of the poultry business to which we may always cling fast. Those principles we have taken into consideration in preparing the material for this edition of SIMPLIFIED POULTRY KEEPING. We hope that you will enjoy reading it and that you will get real tangible profit from so doing.

D. H. GRANDIN MILLING CO.

POULTRYMEN'S PROBLEMS

A poultryman's problems automatically divide themselves into four distinct sets.

In order to make our recommendations clear, which, as a whole, constitute THE GRANDIN WAY of flock management, we will consider them in the following order:

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We have tried to find the answers to these problems in dollars and cents.

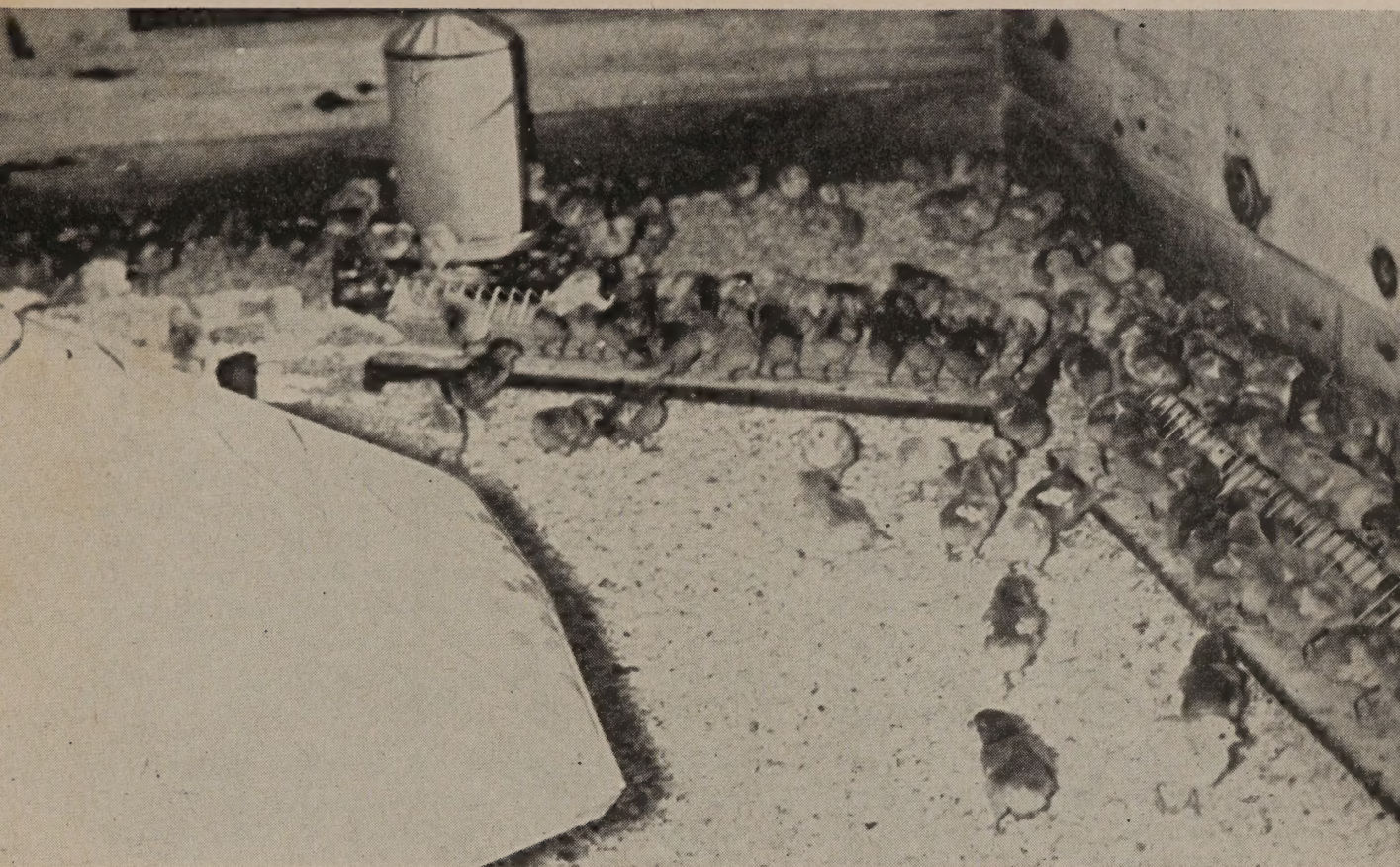
We are working with poultrymen in our efforts to solve the problems which we have in common.



In poultry feeds the name of GRANDIN is synonymous with RELIABILITY and QUALITY.

PROBLEMS OF BROODING

EQUIPMENT—The task of raising chicks should not be undertaken until one is amply supplied with the **right** kind of equipment. This means that he must have good brooder houses, good brooder stoves, and an adequate supply of feeders and water founts. On top of that he should have plenty of land of the right kind on which to conduct his operations. **Good work is never done with an inadequate set of poor tools.**



THE BROODER HOUSE—There are various types of brooder houses, plans for which can be secured from State Colleges and Commercial feed concerns. The single room brooder house should never be smaller than twelve by fourteen feet.

There is much to be said in favor of warm and cold room brooder houses. This idea gets the chick raiser closer to Nature. If the single brooder house is used the cool room may be much cheaper in construction. If the cool room equals the warm room in size, so much the better. There can be no doubt but that chicks when allowed access early in life to a cool room are much better feathered and much more "peppy." They will run to the brooder stove for heat when they need it as they would do to the mother hen. Then too, the problem of expansion is taken care of in the best and cheapest manner. Better chicks can be raised in this way, and better chicks mean more money for the poultryman.

The continuous brooder house, one or two story, with a central heating plant has many points in its favor. The housing cost per bird is lessened, as well as the labor, and heating costs. The tendency of poultrymen who have houses of this type is to crowd even more than in the single brooder house. The penalty for so doing is liable to be **even more severe**.

No single brood of chicks should number more than three hundred. Two hundred and fifty would be a better unit.

BROODER STOVES—For a good and sufficient reason—dependability, coal burning brooder stoves are the most popular stoves in use today. The wood burning brooder stove in sections where wood is plentiful and can be had for the cutting certainly has economic advantages.

Theoretically, the oil-burning brooder stove has two distinct advantages over the coal-burning stove. One is steadiness of heat. The other is the smaller amount of labor involved in its operation. The electric brooder stove is being rapidly developed and has distinct superiority over both the coal-burning and oil-burning stove, especially for later hatches. It furnishes sufficient warmth for the chicks without overheating the room, which means better feathering. Practically no labor is involved in its operation.

The poultryman who is in the market for a brooder stove should look the field over carefully before buying. If you think that you want an oil-burning, or an electric stove, get it on trial if possible. At any rate **don't buy a cheap stove.**

Whatever type of brooder stove the poultryman may use, he should clean and oil it immediately after he gets through with it, and store it in a dry place.

FEEDERS—There are a great many styles of feed hoppers on the market. We prefer those with grille tops because chicks eat from them in a more natural position. Feeders of this type may be had in baby chick, intermediate, and hen sizes. For baby chicks we prefer those thirty inches long. For chicks from four weeks of age until they go on range we prefer the hoppers four or five feet long.

WATERERS—There is a tendency on the part of a great many poultrymen to buy too small water founts for baby chicks. The drinking fountains should hold not less than two gallons each. The larger fountains are better for two reasons. In the first place the chicks are much more likely to be constantly supplied. In the second place, on account of the larger bulk, the water is more palatable.

When the chicks are six or seven weeks old larger water founts, holding four or five gallons should replace the smaller ones.

LITTER—The poultryman is often in a quandary as to what material to use for litter. Shavings (preferably dowel shavings) seem to be the most satisfactory material. In case shavings are not available clean sharp sand of concrete grade gives satisfactory results. In case sand is used a generous supply should be placed under cover in the fall in order that it may be readily accessible when needed.

Peat moss and the various sugar cane litters are excellent.

At first, about an inch of litter should be placed on the brooder house floor. After two weeks a slight addition should be made at intervals of five days until the litter is four inches deep. The litter should be stirred daily. It is a good plan to keep a short handled garden rake hanging on the wall of every brooder room. Twice daily when the fires are attended to the litter should, for the sake of safety, be raked away from the stove.

It is much easier and less expensive to keep the litter dry if it is deep.

BROODING SUGGESTIONS—Before your chicks are placed under the brooder stove be sure that you are ready for them. "Being **ready**", means that your house has been **thoroughly** cleaned and disinfected and that your stove has been running three days with a temperature of approximately 90 degrees at the edge of the hover. Construct an enclosure of beaver board, heavy cardboard, or wire covered with cotton bags, eighteen inches high around the stove at a distance of two and one-half feet from the hover. Place the litter within this circle two days before the arrival of the chicks so that it will be warm and dry when they arrive.

At THE GRANDIN DEMONSTRATION FARM we do not feed chicks on paper or egg flats. The first feed is placed in grille top feeders which are filled rounding full, and partially sunken in the litter. When a sufficient number of feeders is provided there is no danger whatever of the chicks eating litter. In our opinion this is a much more cleanly and sanitary method of feeding. During their first forty-eight hours on the floor, chicks in the process of making use of the yolk, eliminate freely. When their feed is placed in piles on paper, or egg flats, they must necessarily eat a mixture of droppings and feed. We think that clean feed is better for them, to say nothing of the work involved in covering the litter with paper and disposing of it after being used.

We have followed this method of starting chicks for many years and do not hesitate to recommend it as being **safe, easier, and more sanitary.**

Provide four thirty-inch grille top feeders and three two-gallon water fountains.

While removing the chicks from the boxes now and then place the beak of one in the mash, or in the water. Chicks are imitators. Within a period of fifteen minutes they will all be eating and drinking.

At the end of two days spread the litter over the remainder of the brooder house floor and remove the enclosure around the brooder stove. At the end of that time, it has served its purpose. The chicks have learned where to go for heat when they need it. **After that period has elapsed the enclosure does more harm than good.** The chicks need to get out into a lower temperature if they are to retain their "pep", resistance to disease, and feather properly. When the room temperature is too high the baby chick loses much in vitality, and so becomes a ready victim of that dread disease, coccidiosis. A baby chick can withstand considerable cold if it can get to the heat when it so desires. Don't kill your chicks with kindness. **VASTLY MORE CHICKS ARE RUINED BY OVER-HEATING THAN BY CHILLING.** If you have observed a mother hen who stole her nest and appeared on the scene with a brood of baby chicks in the fall, we think you will agree that a chick will thrive and grow in low temperature, provided that it is able to get warm whenever it desires to do so. A **cool**, well ventilated room (during the day) after the enclosure is removed and a good fire in the brooder stove is the ideal arrangement.

Place the feed hoppers and fountains one foot farther from the brooder stove each day until they are close to the walls. This arrangement will have a tendency to make the chicks more active.

There is a decided advantage in the night lighting of chicks. A five-watt bulb or a dimmed lantern suspended over the brooder stove, results in much more even distribution of the chicks when they are bedded down for the night.

When chicks have been on the floor three days, the feeders should be elevated in order to keep the feed free from litter. Most poultrymen elevate the feeders but do not elevate the chicks. Hence the chicks are not in a natural, or comfortable, position while eating. It is impossible for them to eat **all** of the mash in the hoppers because they cannot stretch their necks enough to reach the bottom.

The feeders should be placed on a stand—a board or boards 10 inches wide nailed at each end to two-inch strips placed edgewise. The feeders are then practically three inches from the floor. The feed will be clean and free from litter. The chicks will hop onto these platforms readily and will eat in a natural position. **Hence consumption is increased.**

At the same time the water fountains should be elevated to the same height, the platforms being of sufficient size for the chicks to stand comfortably while drinking. Chicks will drink more water when it is **convenient** for them to get at it. Water is a **BIG** item in the rearing of chicks.

As soon as the chicks outgrow the baby chick feeders they should be provided with those of intermediate size. Larger water fountains should be provided. Both feeders and fountains should be placed on stands 6 inches high covered with one-half inch mesh hardware cloth. **Standing room for the chicks should be provided.**

In the feeding of chicks, as in the feeding of mature birds, **fresh mash should never be placed on top of the old.** The old mash should be shunted to one end of the feeder before the fresh mash is added.

When chicks have arrived at the stage when heat is no longer required, it is a good plan to remove the hover from the brooder stove four days before

the fire is allowed to go out. By so doing the chicks are properly weaned from the hover. The heat is graded downward in the best possible manner, being dissipated over the room rather than concentrated on the backs of the chicks.

The stove should be left in the room for a week after the fire has gone out. To the chicks it is a landmark.

SANITATION—Cleanliness has a tremendously important bearing on the success of every poultryman. It is not difficult to keep brooder houses clean and the chick feeders and fountains in the condition that they should be kept, **provided these matters are attended to with regularity.** The poultryman who cannot do this has more chicks than it is good business for him to have.

VENTILATION—Chicks need clean air to breathe as well as clean food to eat and clean water to drink. There is a tendency on the part of many chick raisers to give this matter little thought. They fail to realize that when a brooder stove is in operation that oxygen is being consumed and noxious gases are taking its place. In their homes they see to it that fresh air is provided. The chicks need it as much as humans. **Many thousands of them die yearly from lack of clean air.**

Chicks that are suffering from monoxide poisoning are weak, drowsy, and have impaired appetites. In some cases they gasp after moving about, then fall with heads thrown back. Sometimes they die in convulsions. **PROVIDE YOUR CHICKS WITH FRESH AIR.**

EARLY ROOSTING—Practically every poultryman has had his troubles in getting his chicks to go to roost. Much of this difficulty is brought about by the fact that the roosts are not provided early enough in the life of the chicks. A chick three weeks old will take quite a sizable hop. That is a good time to put in a roost. An easy and practical way to provide roosts is to screw an eight-inch board, the top being eighteen inches from the floor, on each side of the brooder house starting from the back. This board should be long enough to provide for four roosts ten inches apart. The roosts should be two by three inch joists. The board should be notched to accommodate the roosts edgewise. The top of the roosts will then be flush with the top edge of the supporting board. In case the brooder house is more than twelve feet wide it will be necessary to have a support in the center of the roosts. Only one roost need be put in at first. The others may be added as needed, but **be sure to put in that first one early.**

THE PROBLEM OF EXPANSION—When a brood of chicks of the proper size (250) is placed under a hover in the right sized brooder room (not less than 12' x 14'), it seems as though too much space has been allotted to them. Four weeks later the situation is changed. The room seems to be of the right dimensions. At the end of seven or eight weeks, there are twice as many chicks in the room as there should be. Another room of the same size is needed for the cockerels which should be removed at this time. Unless that extra room is available, the poultryman is lacking space in which to rear chicks properly. Hatches should be so timed that every room is kept full (**not crowded**) at all times during the brooding season.

We have never yet encountered a poultryman who had too much room. We have **too often** seen poultrymen who had too many chicks for their houses.

SEPARATE PULLETS AND COCKERELS WHEN SIX OR SEVEN WEEKS OLD.

CHICK CANNIBALISM WILL NOT BE A PROBLEM WHEN CHICKS ARE RAISED THE GRANDIN WAY.

Chicks that run, jump, and flap their wings are the ones that make money for their owners. That's what **GOOD CHICKS** do that are raised **THE GRANDIN WAY.**

GRASS RUNS—Runs should be provided in front of the brooder house of, at least, the size of the house itself. Early in the season these should be provided with windbreaks of boards, or bags opened in the seams and attached

to the wire on the North and West sides. This will make more comfortable conditions for the chicks, and consequently they will spend more time out of doors.



As soon as the chicks are removed to the range the runs should be thoroughly raked with a fine-toothed lawn rake, and a mixture of red top and clover dropped on top of the ground. The vegetable growth, the action of the sun, rain, frost, and snow will put them in excellent condition by the time they are again needed.

SAND RUNS—If the poultryman does not want to seed his runs each year he will get satisfactory results by enclosing them with eight-inch boards and covering them with five or six inches of coarse, sharp sand. If these boards are painted with crankcase oil before being nailed to the posts they will last a great many years.

In the fall two inches of this sand should be removed and the same amount of clean sand put in its place. By following this plan the poultryman will be in readiness for his early chicks when they need to get out-of-doors. Owing to frost and road conditions in many localities it is not good business to wait until spring before renewing the sand runs.

Sand runs are excellent for early hatched chicks. They can be gotten out-of-doors sooner than on wire or grass runs, because the sand is warmer to their feet and they enjoy the opportunity to scratch and burrow. Provide a windbreak.

CARE OF MASH HOPPERS—A mistake that is often made by poultrymen is placing fresh mash on top of the old. If this program is kept up the day eventually comes when there will be some stale mash at the bottom of the hopper, and, if eaten by the chicks, will cause intestinal trouble. The better way to do is to allow the hoppers to get entirely empty once each day. If they are not entirely empty the mash which remains should be scraped to one end of the hopper.

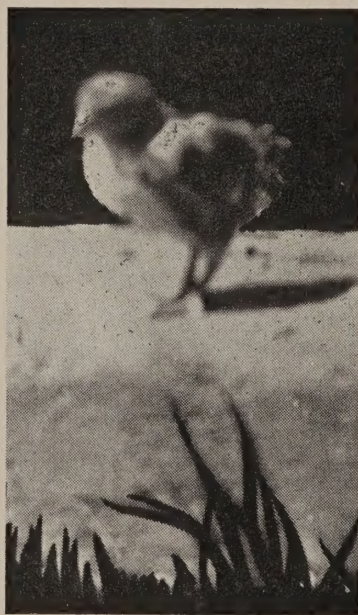
GET THE CHICKS OUT OF DOORS AS SOON AS POSSIBLE

CARE OF DRINKING FOUNTAINS—A shredded copper ball on a handle approximately six inches long is an excellent instrument for cleaning chick drinking fountains, water pans, and buckets. These balls can be bought at most hardware stores.

BATTERIES—Batteries certainly have a place in poultry raising as it is carried on today. However, we feel that their importance has been considerably exaggerated. Chick batteries are valuable to hatcherymen as they afford a fine storage place for surplus chicks, and chicks that are left on their hands on account of cancelled orders. These chicks can be held in batteries at minimum expense until sold. This, we think, is the limit for the economical use of batteries. We believe that chicks started on the floor are superior to those kept in starting batteries for two weeks. We are strongly of the opinion also, that broilers raised on the floor have firmer flesh and shrink much less when shipped alive or dressed. Here again Mother Nature says “no” to putting too many chicks within a given space. **Wouldn't it be more logical to have fewer and better chicks?**

BUYING GOOD CHICKS—A chick may have many undesirable characteristics which cannot be overcome by the best of feed and management—the result of poor breeding.

It's good business for any buyer of day-old chicks to see the stock from which he intends to buy his chicks, and talk with the owner. If the stock doesn't suit him, and the owner doesn't measure up to his expectations, he should keep on going until he finds what he wants. It will be a good investment of time and money.



START WITH GOOD CHICKS

PROBLEMS OF RANGE MANAGEMENT



LOCATION OF RANGE—It is the aim of every poultryman to raise strong, rugged pullets with the conformation and vigor necessary to lay profitably and still have the required reserve of vitality to reproduce their kind. Pullets of this type cannot easily be raised on land that is heavy and poorly drained.

The ideal range must be of sufficient area—at least one acre for every 500 pullets. It should be well drained and well sodded. If the soil is a sandy loam so much the better, because this type of soil is more absorbent and much more readily cleansed by the action of the sun and rain. If the grass is tall it should be mowed. This will cause the pullets to range farther and at the same time they will be provided with a short and tender growth of grass which they will consume much more readily.

RANGE SANITATION—If, when the time arrives to put the pullets on the range, the grass is too tall it should be mowed.

Ranges, as well as poultry houses, should be kept clean. During the heat of the day birds cluster about the range shelter. Consequently, droppings accumulate rapidly in the area four to six feet from the shelter on sides and ends. If allowed to remain, the ground becomes slimy during wet periods. This unhealthy condition can be easily avoided if the poultryman will rake this space weekly with a fine-toothed steel lawn rake, choosing a day when the droppings and ground are thoroughly dry. This is a small job if done regularly, but an **important one**. It is the most logical and cheapest way to fight worms, range paralysis and the various parasitic diseases that afflict poultry.

As soon as the range shelters are vacated in the fall they should be removed to the spot which they are to occupy the next season. If you want to play safe, stake them down. The wire fence should be rolled up carefully and placed under cover for the winter. The entire range should then be raked over with a lawn rake. The spot on which the range shelter stood during the season should be thoroughly cleaned and the holes about the shelter, made by burrowing, filled with loam.

In the early spring when the ground is bare, but still freezing nights, sow grass seed on all the bare spots. A good mixture for this sowing is 1 peck Timothy, 3 pounds Red Top, 3 pounds Red Clover. There is no need to rake in the grass seed. The action of the frost will give you an excellent “catch.”

If the above method of handling the range is followed, the poultryman will need only two ranges and both will always be well sodded. He will get a heavy crop of hay from one of them each year.



Note the tall grass on this range at **THE GRANDIN DEMONSTRATION FARM**. It was used last year and has been used in alternate years for fifteen years.

SHADE ON THE RANGE—While it is highly desirable to have natural shade on the range good pullets can be raised without it if the land in the immediate vicinity of the range shelter is kept clean.

THE RANGE SHELTER—Too much cannot be said in favor of the range shelter. This idea is directly in line with Nature's program. Better pullets can be grown in them than in colony houses. Economically there can be no question as to their value. Pullets can be reared at less expense in this manner and with much less labor than in houses. **The more pullets one has from which to select his layers the better off he is sure to be.** On the point of sanitation there can be no argument as between the range shelter and the colony house. The **GRANDIN RANGE SHELTER** is an excellent type of shelter and costs very little to construct. (Plans for the **GRANDIN RANGE SHELTER** will be sent free upon request.)

Before the range shelters are put into use each year they should be carefully sprayed with a commercial mite destroyer and the roosts painted with carbolinum. Throughout the summer the poultryman should frequently inspect his shelters to make sure that the lice and mites are not robbing him of his profits. **The range shelters should be placed at least one hundred and fifty feet apart.**

THE KIND OF PULLETS TO PUT ON THE RANGE—It's mighty poor business to put a pullet on the range about which you entertain any doubts as to health. It's much better to throw the weaklings in with the cockerels intended for market. Don't jeopardize the health of your good pullets by keeping them in contact with weaklings. **All of the profit which a poultryman gets comes from his good birds.**

CROWDING IN RANGE SHELTERS—One of the numerous problems confronting poultrymen is the mixing of pullets in shelters on the range. This particular problem is not a difficult one to solve.

The best use is made of a range when the shelters are equally scattered over it. In any case, they should not be less than one hundred and fifty feet apart.

Before the pullets are placed in a range shelter, a temporary fence should be built around it. This fence should be the length of a crowbar from the shelter at all points. This temporary fence should be kept in place two or three days.

The fact that the birds can roam around the shelter and become familiar with it from **all angles** helps them to recognize it as **their home** after the temporary fence has been removed.

Only **good** pullets should be put on the range. Pullets that are inferior when old enough to go on the range seldom ever "come". For that reason they should be moved during the day, preferably in the forenoon. Daylight is needed to do a good job in selecting.

If the pullets are locked in the shelter for a period of two hours, they will go into the shelter more readily when night comes.

Many poultry authorities advise moving feeders and water pans frequently in order to get away from ground pollution. In our opinion, based on experience, feeders and water pans should **always** be kept in the immediate vicinity of the shelters. The birds should range **only** for their green feed.

It is a much better program to rake the droppings that accumulate in the vicinity of the shelter weekly. A lawn rake is the tool to use. By so doing, the range is always more tidy in appearance, and, of course, the conditions are more nearly right from the sanitary point of view.

If this program is followed, there will be no mixing of pullets in the range shelters. More work may be involved, but the results in better pullets justify the extra effort.

ON THE RANGE AS WELL AS IN THE HOUSE, CROWDING MUST BE AVOIDED.

FEEDING ON THE RANGE—Hoppers of sufficient capacity (two hoppers five feet long) should be placed near each range shelter filled within an inch of the top with GRANDIN'S START-TO-FINISH MASH. The grille top type of feeder is the most satisfactory because birds can eat more readily from them. If the feed gets wet during a rainy period no harm has been done. If necessary pour off the water and do not put in more mash until the feeders are empty.



Up in the hills of New Hampshire this successful poultryman is doing business on a big scale. He put 21,000 chicks under brooder stoves this season. He has "made good" by feeding GRANDIN'S.

Feeding hard grains on the ground is a dangerous practice, because it is through the medium of droppings that most poultry diseases are transmitted. The most satisfactory method of feeding hard grains is to provide each shelter with a "V" trough ten feet long, using six and seven inch boards. A portion of the hard grains may be placed on top of the mash.

On the range the pullets (and cockerels) should be eating as much hard grain as mash. They should be given all the GRANDIN'S SCRATCH GRAINS that they will eat at night and one-half of that amount in the morning. When the feeder has gauged their requirements he can save time and labor by doing all of his feeding of hard grains at night.

On excessively hot days, especially in the case of Leghorns, the amount of hard grain feed should be cut in two, or wholly eliminated. The birds are not active enough to properly assimilate hard grains. If given a full feeding, indigestion with attendant losses may result.

CARE OF MASH HOPPERS—Extreme care should be taken that pullets on the range do not eat any stale mash. When possible the hoppers should be allowed to get empty, or nearly empty, every day. If this cannot be done all of the mash that remains should be scraped to one end of the hopper before the fresh mash is put in. **Fresh mash should never be placed on top of the old.**

WATER ON THE RANGE—When water is piped on to the range it is a common practice to lay the pipe on top of the ground. That means that on a hot day when the pullets want, and need, cold water, they must drink hot water. It is a much better plan to plow a furrow and drop the pipe into it. The sod can quickly be laid back over it with a manure fork or a hand potato digger. This slight extra expense and effort means much to the poultryman's pocket-book.

Nothing better can be found for drinking fountains on the range than open galvanized pans, approximately fifteen inches in diameter with perpendicular sides about five inches high. Pullets drink from them readily and it is very easy to keep them clean. Pans of this sort can be bought at hardware stores or poultry supply houses.

On hot days the pullets relish a drink of **cold water**. The fact that the drinking pans are full of water is not enough. They should be emptied three times daily and refilled with fresh, cool water. They should be scrubbed once every day.

WHEN TO HOUSE PULLETS—Many poultry authorities advise housing pullets as soon as production begins, or when it has reached 25%. We are strongly of the opinion that exercise in the open means as much to poultry as to humans. At the GRANDIN DEMONSTRATION FARM we have evidence in the form of EGG RECORD CARDS to prove that there will be no loss of production and no moulting when housed, by pullets that are allowed to remain on the range until October—provided, of course, they are raised on GRANDIN'S and managed THE GRANDIN WAY.

It should be borne in mind that pullets on the range are building up bodily health and vigor which will be found necessary for profitable production of eggs, and chicks that will live. Disease and high flock mortality are the things that poultrymen are striving to get away from. Late housing of pullets is one way to accomplish that end. **In this argument it's safe to say that Mother Nature is on our side.** After all is said and done, **we must have birds that live.**

The early hatched (January or February) pullets may be housed any time after the tenth of September. In case one has a two-story house the **best** of them should be allowed to run out of doors until cold weather comes. You will get your **best** chicks from those flocks.

Immediately upon being housed all flocks should be provided with a hopper of GRANDIN'S GREEN FEED. They will feel the need of the roughage to which they have been accustomed on the range.

Don't crowd. It's better to have a room full of birds that may be used for replacements from time to time.

GRADING PULLETS FOR THE LAYING HOUSE—A satisfactory method of grading pullets for the laying house is to close the shelters, containing the birds which one plans to house the next day, some time, during the evening. It is a good plan to be on the job as early as possible the next morning. One man removes the birds from the Shelter and passes them to the second man. Those that pass his examination, he hands to a third man who puts them in crates. Those birds that fail to pass are dropped on the ground to receive consideration at a later date. As soon as the shelter is emptied the doors are opened and they pass to the next shelter.

The birds that are dropped on the ground will come under two classes—late maturing pullets with possibilities and those that go to market.

Don't put a single bird in the laying house that doesn't satisfy you.

LATE MATURING PULLETS—The question as to whether or not too much stress has been put on the early maturity of pullets is worthy of discussion. It is our opinion that the late maturing pullet (seven months) has been much maligned. The poultryman who has doubts on this subject should, when housing his pullets, leave the late maturing birds on the range as late as possible. He should then place them in brooder houses and make a careful checkup on them. He will be surprised to learn how many of these birds will develop into soft, sturdy, and profitable layers. Many of them he will decide to be good enough for his breeding pens. The remainder will bring good prices on the Thanksgiving or Christmas markets.

Some of the best pullets that we have ever raised at the GRANDIN DEMONSTRATION FARM did not mature until they were seven months old. When we say "best", we are taking into consideration size, production, livability, hatchability, and egg size.



An ideal range on the plant of a successful Vermont poultryman.

NESTS ON THE RANGE—Since we are not in sympathy with the modern practice of housing pullets as soon as they begin to lay, we believe that it is a good idea to provide nests on the range as soon as they begin to “comb up”. If nests are provided at this time, the pullets will look them over and decide where to go when they start to lay.

Pullets raised **THE GRANDIN WAY** are nest and roost broken when they go to the laying house.

DO NOT CLOSE THE RANGE SHELTERS AT NIGHT UNLESS YOU ARE SURE THAT IT MUST BE DONE. PULLETS DO A LARGE PART OF THEIR GRAZING IN THE EARLY MORNING HOURS.

GRANITE GRIT, AND OYSTER SHELLS SHOULD ALWAYS BE KEPT BEFORE THE PULLETS WHILE THEY ARE ON RANGE.

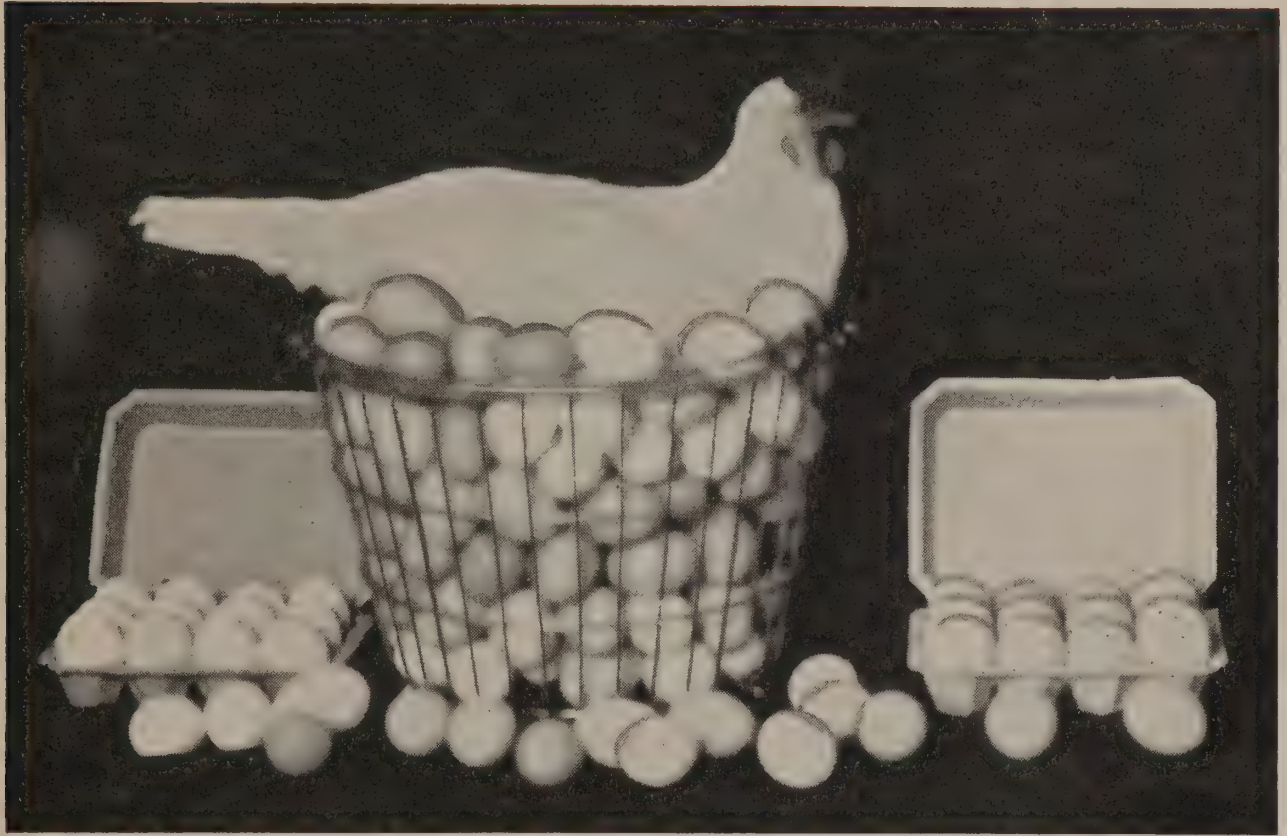


DON'T WAIT TO BUILD RANGE SHELTERS UNTIL YOU NEED THEM. BE READY ON THE RANGE WHEN THE TIME COMES TO PUT YOUR PULLETS AND BREEDING COCKERELS OUT IN THE OPEN.

DO NOT BE SATISFIED WITH A HIGH MORTALITY RATE. BREED, FEED, AND MANAGE THE GRANDIN WAY.

THERE IS PLENTY OF ROOM FOR HEADWORK ON THE PART OF EVERY POULTRYMAN.

PROBLEMS OF THE LAYING HOUSE



HOUSING REQUIREMENTS—The character of the house in which layers are kept has a decided bearing on the profits to be obtained from them, whether it be in the production of eggs alone, or eggs and chicks. Happy hens—that means **comfortable** hens always yield the larger profit to their owners.

It is reasonable to expect birds that are kept in well ventilated, well insulated, and well lighted houses to produce and live better than those of the same breeding that are kept in cold, damp, drafty, and poorly lighted houses and fed on exactly the same rations.

Old laying houses may be insulated and ventilated with profit to the owner. When he contemplates building a new laying house he should get plans from various sources. State colleges and commercial feed companies will furnish them. He can then select the type of house which he believes will best fit his case.

LOCATION OF LAYING HOUSE—The laying house should be located on well drained land. Provision should be made for an ample outdoor run at the front. The real breeder will find a good use for these yards.

SANITATION IN THE LAYING HOUSE—Cleanliness in the laying house is an important consideration for **every** poultryman.

The dropping boards should be cleaned **every** morning. It's an **easy** job if done **every** morning. The drinking receptacles should be scrubbed with a brush once daily. So much of a poultryman's success depends on the **amount** and **condition** of the water that he furnishes to his layers that it is difficult to understand why so many poultrymen are careless in this respect.

At least once each year the good poultryman, like the good housewife, will clean house **thoroughly**. The best time to do this is in the interim when he has disposed of his layers and is making ready to house his pullets.

After the laying house has been thoroughly cleaned, the roosts and roost supports should be painted with Carbolineum. The dropping boards should be sprayed with a standard commercial louse destroyer. The walls, ceiling, and floor should be sprayed with Carbola.

During the ensuing year all that need be done is to keep the litter and floor in proper condition.

There are some things to be said in favor of the manure pit. **The day comes however, when the manure must be removed.**

It is a noticeable fact that those rooms that are equipped with dropping boards, which are cleaned daily, smell better than those that are equipped with pits. Clean air means as much to hens as it does to humans. On top of that, there is the difference in floor space to be considered.

NESTS—A nest should be provided for every five hens. In case trap nests are used there should be one for every three hens. It is good business to supply an ample number of nests. The breakage avoided will soon take care of the expense of a few extra nests. Then too, there will be fewer soiled eggs.

It should be borne in mind that nests for the heavier breeds should not be as high as those for Leghorns. Landing boards should be provided so that the nests are easily accessible. Thumps do the birds no good.

We are strongly in favor of metal nests. They are easily removed when the house is cleaned. A coat of carbolineum on the wall space where they hang easily settles the problem of lice for a year.



WINTER FEEDING PROGRAM FOR HEAVY BREEDS—The first month in the laying house is a critical period. Cannibalism must be avoided. Those pullets that are on THE GRANDIN THREE-MASH SYSTEM of feeding should be fed GRANDIN'S GROWING MASH. In the case of those that were started on GRANDIN'S START-TO-FINISH MASH, no change ever need be made.

At the end of the month those pullets that are six months old, or older, and being fed GRANDIN'S GROWING MASH, should be changed to GRANDIN'S LAYING MASH.

In order to replace the roughage which they were getting on the range, a separate hopper should be provided and kept well filled with GRANDIN'S GREEN FEED at all times, both winter and summer.

During the cold months—from November to March—we often hear this complaint from poultrymen: "My birds have slumped, what's the trouble?" Ninety-nine times out of a hundred, we find that this flock is molting prematurely and that one-half, or more, of the birds are decidedly underweight.

A large majority of poultrymen do not feed hard grains as they should be fed.

We dislike very much to hear anyone say that a certain number of birds should be fed a certain number of pounds of hard grains per day. "Pounds" have no connection with the feeding of hard grains during the cold months. Birds are not machines. They have individual appetites and food requirements. This difference is true when birds are grouped. For this reason no two groups of birds can be alike as to their food requirements. Hence the logical thing to do in order to maintain the body weight of **every individual bird** is to give each group **all** of the hard grains that they will consume at night. In order to make sure that **every** bird has had **all** of the hard grains that it needs, there must be a small amount left when the lights are turned off.

We are opposed to the feeding of hard grains in the litter. In the first place, we question this method from the sanitary point of view. There are other, and, perhaps, more important objections. When the hard grains are scattered in the litter, there is no possible way of checking consumption. The voracious, active bird gets her fill, the indifferent one may get a part of her requirement, and the timid bird may go to roost with an empty crop. **In that case the flock has not been fed.** It may be that too large a quantity of hard grains has been thrown in the litter. Such being the case, a certain amount will become unfit for consumption, but may be picked up sometime by a bird, which is "just too bad" for its owner.

In the flocks that are molting prematurely and are low in production, there are some birds in excellent condition, others are thin. **The answer is litter feeding of hard grains, or feeding on the pound basis.**

What then is the proper way to feed hard grains? "V" troughs made of seven- and eight-inch boards should be provided in sufficient lengths to equal that of the mash hoppers. During the day these troughs should be suspended on the wall. When feeding time comes at night (one hour before the birds go to roost) the troughs should be placed on the floor. Two-thirds of the hard grains (GRANDIN'S SCRATCH GRAINS) should be put in the troughs and the remaining third distributed in the mash hoppers. By observation, the feeder will learn the **exact** amount of hard grains to feed his birds. If there is a small amount left when they have gone to roost, he may feel certain that **every** bird has been fed. **The flock has not been fed unless every individual has been fed.**

If a poultryman believes that he must feed all of his hard grains in the litter to promote exercise on the part of his birds, he is mistaken. One quart of hard grains in the litter will induce his birds to do as much scratching as twelve.

This matter of hard grain feeding is highly important.

Keep hoppers well filled with GRANDIN'S START-TO-FINISH MASH.

Poultrymen who follow the GRANDIN WAY can well do away with the arduous task of wet mashing their flocks. In case one feels that his birds are not in as good flesh as they should be he may feed GRANDIN'S FLESHING PELLETS at noon on top of the mash at the rate of 3 quarts per each 100 layers.

The poultryman who hatches his own chicks, sells day-old chicks, or produces hatching eggs for a hatchery should turn to page 36 of this booklet and read what we have to say about GRANDIN'S BREEDER MASH.

SUMMER FEEDING OF HEAVY BREEDS—No change need be made in the feeding program during the warm months except in the matter of hard grains. In the case of Rocks they should be cut down to 3 quarts daily per 100 birds. In the case of Reds and other breeds of that type the daily ration of GRANDIN'S SCRATCH GRAINS should be limited to 6 quarts per 100 birds.

WINTER FEEDING OF LEGHORNS—The winter feeding of Leghorns should not differ from that of the heavier breeds with the exception of the noon feeding. Leghorns should be given **all** the GRANDIN'S FLESHING PELLETS at noon (on top of the mash) that they will clean up within a period of one-half hour.



SUMMER FEEDING OF LEGHORNS—Since it is more difficult to maintain the body weight of Leghorns in heavy production, it is necessary to follow the winter program of feeding hard grains. On exceptionally hot days it is a wise move to cut the usual amount of hard grains fed in half. A full feeding, due to the inactivity of the birds, may cause indigestion, resulting in "blue comb" with its attendant loss of both production and birds.

WATER—Provide an abundant supply of water. No better, more sanitary, or more economical drinking device has yet been discovered than a pail partially sunken in a stand 18 inches high and 30 inches square. **The pails should be scrubbed every morning.**

Water, necessarily, enters very largely into the discussion of how to avoid winter molting since 65.5% of a whole egg, and an equal percentage of a hen's body, is composed of water. In order to promote a maximum intake the water should at all times be of such a temperature that the hen can drink it in large quantities without being required to raise it to her body temperature. Above all things else do not neglect the water supply. Provide receptacles of good size and see to it that they are kept well filled. You cannot afford to neglect 65% of your business.

LIGHTS FOR LAYERS—Lights are a great help in lowering the cost of winter eggs. When the weather is cold the layers need more feed than they do in moderate or hot weather. In winter the days are so short that the time for consuming that extra feed is not adequate. The hen should have sufficient time to eat the food required for her bodily needs beside consuming the material for making eggs.

For a twenty-foot room two forty-watt bulbs with reflectors spaced 5 feet from the ends in the center of the area between the edge of the dropping board and the front wall, will give an ample amount of light. A separate line of BX cable drawn in a line perpendicular to the front edge of the dropping boards carrying one ten-watt bulb in the center on a separate switch constitutes a satisfactory lighting system. When the front lights are switched off and the dim light switched on the birds immediately go to the roosts and distribute themselves without confusion or injury. In our own experiments this system of lighting has proven infinitely superior to the use of dimmers and is well worth the extra cost involved.

How much use should be made of lights and whether they should be used in the morning or at night are much discussed questions. For the average poultryman it seems to us that night lighting of layers is the best method to follow. When the hen gets down from the roost in the morning in cold weather she should have immediate access to clean fresh water from which the chill has been removed. The normal poultryman is not anxious to get up in the wee hours of winter mornings to see that his birds are provided with clean water of the right temperature. If the lights go on automatically at four o'clock, the hens must wait for him to get up before getting water or they must drink stale water from heated insulated fountains.

There is another advantage in night lighting. The poultryman gets up at daylight. He is on the spot and he knows just when to turn the lights on and when to turn them off in order to give his birds the exact length of day which he thinks they should have. The amount of daylight will vary according to the season and weather conditions. In following the night system of lighting the poultryman is "on deck" all of the time. When he snaps on his dim lights he can empty his water buckets, see to the room ventilation and go into the house with the feeling that all is secure for the night.



In hot weather the layers should be kept cool and comfortable. Openings at back of the rooms under the eaves like those pictured add to their comfort. The shutters are hinged at the top.

As to the number of hours of light that should be given hens there is room for debate. Too many hours are worse than none at all. There is a happy medium, however, which brings gratifying results. Twelve hours of light seems to give the best results for breeders. Fourteen hours of light, for birds that are kept solely for egg production, is sufficient for the maintenance of proper body condition and profitable production.

CULLING IN THE LAYING HOUSE—The poultryman who is “onto his job” will keep a watchful eye on his flock. He will immediately remove and destroy a bird that is out of condition. He will market the quitters. He will have some good birds in reserve in one or more of his brooder rooms that he can use to replace those that failed to live up to his expectations.

CARE OF MASH HOPPERS—Many poultrymen are careless about the feeding of mash to their layers. It is not enough to keep the hoppers well filled at all times. They should be well filled with **clean fresh** mash. It is a dangerous practice to constantly place fresh mash on top of the old. Every time that mash is placed in the hopper the old should be removed and placed on top, or scraped to one end. This operation requires but very little time, but is of great importance.

REASONABLE EXPECTATIONS—Don’t look for too big production but follow a line of feeding and management (THE GRANDIN WAY) that does not lower the vitality of the flock; and when a reasonably profitable laying year is completed you still have a flock of birds to sell that tops the market.

LITTER—There is a large variety of materials that may be used for litter. Whatever kind (owing to price, location, etc.) is most economical for any particular poultryman is the one for him to use. Regardless of the kind of litter used it should be deep (at least four inches) and stirred and leveled at least once weekly.



This Connecticut poultryman has found that good equipment (which includes buildings) and good feed (GRANDIN’S) and good management (THE GRANDIN WAY) will bring the desired results.

CARE OF EGGS—There always has been, and it is reasonable to suppose that there always will be, poultrymen who are careless about the handling of their eggs. Yet these same poultrymen growl because they do not get as much for their eggs or find as ready a market for them as the poultrymen who properly handle their eggs and put a first-class article on the market.

In order to get the highest market price for eggs, the suggestions listed below will be found of value.

1. Unwashed eggs keep better and look better than those that have been washed. Clean litter, clean dropping boards, and clean nesting material help to bring about this desired end. Wash as few eggs as possible.
2. Infertile eggs retain their freshness much longer than fertile eggs. As soon as the breeding season is over the males should be removed from the pens immediately.
3. Eggs should be collected at least twice daily. During extremely hot or cold weather they should be collected not less than three times daily.
4. The temperature of the room in which the eggs are kept should be even and cool. Practically every poultryman has a cellar and he should use it for storing his eggs.
5. Eggs should be allowed to cool before they are packed in cases. Wire baskets are better than galvanized iron pails for collecting eggs, due to the fact that they are porous and the eggs will soon lose their animal heat in them.
6. Every person who produces eggs for market should for his own protection, as well as that of his customers, invest in an egg grading scale.
7. If one has a select retail trade it is advisable to purchase a candling light in order to detect blood spots, cracks, etc.
8. A neat attractive package always helps to sell merchandise. For that reason the poultryman should always have clean new flats and fillers in his egg cases when eggs are to be shipped.
9. The careful poultryman will clean up on his stock of eggs every four or five days during warm weather, and once each week during the cool months.

Egg size, shape, color, and viscosity of the white are matters of breeding. Flavor, yolk color and, to a large extent, shell texture are matters pertaining to feeds.

THE POULTRYMAN WHO HAS GOOD STOCK, HANDLES HIS EGGS PROPERLY, AND FOLLOWS **THE GRANDIN WAY** OF FEEDING AND MANAGEMENT WILL HAVE **QUALITY** EGGS TO SELL.

CLEAN EGGS CAN BE GATHERED ONLY FROM CLEAN NESTS. CLEAN NESTS ARE TO BE FOUND ONLY IN CLEAN HOUSES. POULTRYMEN GET BETTER PAY FOR CLEANING HOUSES THAN FOR CLEANING EGGS.

GRANDIN'S BREEDER MASH

isn't "Just Another Breeder Mash". It is the type of Breeder Mash which enables Poultrymen to get the Best Results in FERTILITY, HATCHABILITY, and PRODUCTION of which their flocks are capable.

PROBLEMS OF BREEDING



THE KIND OF BREEDERS (FEMALE) TO HOUSE—It is a mistake to think, as many poultrymen do, that because a bird has all of the desirable characteristics of a layer that she should go into the breeding pen. She may have certain physical characteristics which it would be poor business to propagate if a certain type is to be bred. There may be some outward evidence that a bird is not physically sound though she may have the earmarks of a producer. Birds of these classes should be placed with the unmated layers. **Only “peppy” birds of the right type and formation should be placed in a breeding pen.**

THE KIND OF COCKERELS TO USE AS BREEDERS—Cockerels intended for breeding purposes should be hatched in January or February. When they have reached the broiler age select the most likely ones—those that show normal early maturity, have good shape and vigor, and are well feathered. They should then be placed on a clean, green range well away from the pullets and receive the same attention and care.

When the cockerels have reached the soft roaster stage, those that have not developed as they should may be sold for market. Put “specs” on the rest of them to prevent fighting.

It pays to put a lot of time and effort into the development and selection of breeding cockerels.

You can depend on
GRANDIN'S BREEDER MASH



MATURE FEMALES FOR BREEDING—Flock vigor can be maintained by carrying over comparatively few females if they are of the right kind and their sons **only** are used in the breeding pens. When carefully selected males from mothers of the right type are used as breeders through the entire flock the value of maturity has been secured at minimum cost. **Somewhere in the breeding program we must use old stock. This is the most economical way to do it.**

The last week in August is a good time to select the females which one wishes to carry over as breeders in case he doesn't trapnest. Those that have pale shanks and beaks, in full production and full of "pep" are the ones to keep. Give them a month, or more, in the open, a range shelter will do. A house and yard especially constructed for this purpose would be better.

ELIMINATION OF BROODINESS—It has been conclusively proven that broodiness is an inherited characteristic. Such being the case, there is a way out of the difficulty for the breeder who will make the comparatively small effort necessary.

As soon as a broody hen shows up band her and put her in the broody coop. If she becomes broody again put on another leg band. Put on the third, or fourth, if necessary. When some "killers" are wanted the poultryman will know where to find them.

If the program above is followed by a poultryman for a period of six years he will find that broodiness is no longer one of his problems. Best of all, he has received good pay right along for his extra effort by a sure culling process.

There are exceptions to all rules. It is easy to forgive the outstanding bird that has been broody only once when it comes time to select those which are to be carried over for breeders.

PRODUCTION OF HATCHING EGGS—The modern incubator is so efficient and the commercial feed manufacturer is so much alive to the necessity of producing the right kind of feed for the production of hatching eggs that the remaining factors are in the hands of the producer. That means that in order to attain high hatchability his management program must be **RIGHT**.

We have plenty of evidence in the form of testimonials that those poultrymen who have fed **GRANDIN'S BREEDER MASH** and followed the **GRANDIN WAY** of management have been able in **every** case to produce eggs that were high in both fertility and hatchability. **They got the results that they expected.**

A least a month before he begins to save hatching eggs, the poultryman should have completed his final culling and decided from just what pullets, or hens, he is going to get his hatching eggs. His breeders (both male and female) should be in first class physical condition if the desired fertility and hatchability is to be obtained. **They should be the cream of his flock.** The breeding pens should be clean, warm, dry, and well ventilated.

In the case of the larger breeds, eight males should be provided per one hundred females. In the case of Leghorns, six cockerels will suffice. In each case a leeway is thus provided to take care of mortality. Due to the pugnacity of competent breeding cockerels, subtractions can be made, but no additions. It is a good plan to have a sufficient number of males (running together) in reserve to mate at least one pen of layers.

Hatching eggs should never be washed. Washing removes the protective coat and causes too rapid evaporation during incubation, therefore, the poultryman should supply his breeders with plenty of clean nests.

Shape, size and color of eggs are all inheritable factors. For that reason only such eggs as are of the right size, shape, and color should be placed in the incubator. The consuming public buys eggs largely upon appearance. When it calls for brown eggs it wants them to be brown. When it calls for white eggs it wants them to be chalk white. The poultryman can by persistent selection of his hatching eggs give the consuming public what it wants and is willing to pay for.

The public wants eggs weighing twenty-four ounces, or more, to the dozen. Consequently he should put only those eggs in his incubator that weigh from twenty-four to twenty-six ounces per dozen. If he is to produce eggs of the right shape, shell texture and color those are the kind he should incubate.

Eggs that otherwise would be good hatching eggs are often spoiled in the handling. Hatching eggs should be collected four times daily. As soon as they are cooled they should be placed in the case and covered with a flat. If the eggs are used, or shipped within a period of seven days there is nothing to be gained by changing the position of the case.

The room temperature where hatching eggs are stored should not run higher than 60 degrees, nor lower than 45 degrees. A cellar is the best place to store hatching eggs on account of the humidity.

It is good business to candle hatching eggs. In this way, checks, cracks, porous shells, and loose air cells are detected. The market value of the eggs thus saved will constitute good pay for the time involved. On top of that, incubator space will have been used to better advantage.

Transport eggs carefully, rough transportation causes tremulous air cells and eggs so affected suffer in hatchability.

GOOD BREEDING IS THE SOUND BASIS OF THE POULTRY INDUSTRY.

ONLY OUTSTANDING FEMALES AS TO VIGOR AND PRODUCTIVE CHARACTERISTICS SHOULD BE USED AS BREEDERS. TOO MUCH **MASS BREEDING** HAS BEEN DONE.

KEEP THE INCUBATOR ROOM CLEAN.

DO NOT FORCE BREEDERS FOR TOO HIGH PRODUCTION WITH FEED OR LIGHTS.

FOLLOW . . .

This Practical Program of Feeding

FIRST WEEK

When chicks are taken from the boxes and placed in the enclosure surrounding the brooder stove they should find fountains filled with "tempered" water and hoppers full of GRANDIN'S START-TO-FINISH MASH.

The water need be "tempered" only for a period of three days.

The enclosure around the brooder stove should be removed at the end of the second or third day. The chicks will then be hover broken.

During the first three days a slight amount of baby chick grit should be sprinkled on top of the mash. After that it should be provided in a separate hopper. We recommend the use of hard granite grit all the way through, because it is insoluble in digestive acids and so does not break down the carefully prepared balance of GRANDIN'S POULTRY MASHES.

There is much to be said for the practice of feeding chicks entirely on hard grains for the first two days. Many poultrymen believe that by feeding hard grains at the start there is less "pasting up". There are no better chick grains on the market than GRANDIN'S BABY CHICK GRAINS.

Gradually move the feed hoppers and water founts away from the stove. At the end of the third day both hoppers and water founts should be elevated in order to keep them free of litter. Read BROODING SUGGESTIONS beginning on page 4.

SECOND WEEK

We are strongly of the opinion that the early feeding of hard grains enables chicks to build up a strong gizzard and a sturdy digestive tract. Both will be needed later if the ability to ward off disease and consume the amount of feed necessary for profitable production is to be attained.

GRANDIN'S BABY CHICK GRAINS should be sprinkled three times daily, in small amounts, on top of the GRANDIN'S START-TO-FINISH MASH.

Another hopper should be provided and filled with GRANDIN'S GREEN FEED. Chicks, naturally, are roughage eaters. In order that they may make the best use of the concentrates (mashes) with which they are provided, roughage must also be provided.

Chicks will not develop the pernicious habits of toe picking, feather pulling, and cannibalism if they have access to a hopper of GRANDIN'S GREEN FEED at all times until they go on range.

THIRD AND FOURTH WEEKS

Continue to feed GRANDIN'S START-TO-FINISH MASH.

Increase the amount fed of GRANDIN'S BABY CHICK GRAINS.

At the beginning of the fourth week, change to GRANDIN'S INTERMEDIATE CHICK GRAINS.

Give the chicks **all** that they will eat at night on top of the mash. It is a good plan to feed about one quart per hundred chicks during the day. **As long as the chicks are in the brooder house do not feed any hard grains in the litter.**

Provide low roosts.

At the end of the third week the baby chick feed hoppers should be replaced by those of intermediate size. **Provide plenty of feeding space.**

As soon as possible the chicks should be allowed to go out of doors.

Provide intermediate chick size grit.

FIFTH AND SIXTH WEEKS

Continue to feed GRANDIN'S START-TO-FINISH MASH.

Larger water founts should now be provided.

Screen corners with hardware cloth.

Keep brooder house warm (not hot) at night. Huddling with its attendant losses is thus avoided.

GRANDIN'S INTERMEDIATE CHICK GRAINS should be fed in increasing quantities.

SEVENTH TO TENTH WEEK

Keep hoppers well filled with GRANDIN'S START-TO-FINISH MASH.

The cockerels should be removed at the end of the seventh week.

At the beginning of the ninth week GRANDIN'S SCRATCH GRAINS, or GRANDIN'S SPECIAL SCRATCH GRAINS should replace GRANDIN'S INTERMEDIATE CHICK GRAINS.

Change to hen size grit.

At the end of the tenth week the amount of hard grains fed should nearly equal the amount of mash consumed.

TENTH TO TWELFTH WEEK INCLUSIVE

GRANDIN'S START-TO-FINISH MASH should be kept before the chicks at all times.

Continue to increase the amount of GRANDIN'S SCRATCH GRAINS, or GRANDIN'S SPECIAL SCRATCH GRAINS, fed until the amount consumed equals that of the mash.

READ PROBLEMS OF RANGE MANAGEMENT, page 9.

THE THREE-MASH SYSTEM OF FEEDING

Poultrymen who prefer the three-mash system of feeding may follow the foregoing practical program of feeding and management with the assurance of success.

GRANDIN'S CHICK STARTING MASH should be fed during the first six weeks. At that time it should be replaced by GRANDIN'S GROWING MASH. GRANDIN'S LAYING MASH should not be fed until the pullets have been housed at least two weeks, regardless of their age. Under no circumstances should GRANDIN'S LAYING MASH be fed before the pullets have attained the age of six months.

TURKEY RAISING

The turkey industry is growing rapidly. This remarkable expansion is due largely, to the fact that the **causes** of high poult mortality have been found. Methods of management have also come into use which help to overcome this drawback.

The nutritional needs of turkeys have also been scientifically investigated.

Study and experimentation along these two lines have resulted in a revival of the turkey industry on a more extensive and profitable scale.

The information which follows is in very concise form. However, the reader who would like more detailed information on any particular phase of turkey feeding, or management, should write us. Address your communications to **POULTRY SERVICE DEPARTMENT, D. H. GRANDIN MILLING CO., JAMESTOWN, NEW YORK.**

BROODING EQUIPMENT—A brooder house 12 x 14 feet will accommodate 150 poults. We believe that, regardless of the size of the brooder room, no more than 150 poults should be placed under a brooder stove. **If you want to raise more turkeys you should have more brooder houses and more equipment.**



Sun porches are essential to the proper rearing of poults. The sun porch should be, at least, as large as the house. Three-fourths inch heavy-gauge wire cloth should be used for the floor which should be **well supported**. In order to prevent sagging of the wire cloth, it will be found advantageous to buy it in two, or four, foot widths. The cross supports should be placed two feet apart, thus making the squares two feet.

The wire platform should be provided with shelves on the outside to support the feed hoppers which should be covered by a long roof on the outside and short one on the inside of the pen. In this way the feed will not become wet, regardless of the direction from which the rain may come.

Three-eighths inch dowels, one foot in length are much better than lathes for covering the opening to the feed hoppers. The dowels, two inches apart, are set ladder style, into one by two inch pine strips. A grille is thus made which is readily removable in case one feels that smaller openings are needed. As a rule, however, poults should be fed and watered on the platform until they are too large to go through a two-inch opening.



Pans made of galvanized iron with a quarter inch lip at the front and high backs (to prevent the mash being blown away by the wind) should be placed on the shelf. The drinking pans (one on each side) need have no lip or high backs.

BROODING SUGGESTIONS—In general, the turkey raiser in the care of his poults may safely follow the recommendations given elsewhere in this booklet for the care of chicks. The same brooder stoves may be used, also the same type of feeders and water founts until the poults are old enough to eat and drink from the pans on the shelf outside of the wire sun porch.

The poults should be confined to the brooder stove for two or three days by a low enclosure (18 inches high) placed 30 inches from the edge of the hover.

Four grille top chick feeders filled with GRANDIN'S TURKEY STARTER should be provided, also three, or four, water founts. In addition to the mash placed in the feeders some should be placed on egg flats interspersed among the feeders. As soon as the poults are eating from the feeders remove the flats.

Scatter a small amount of chick size grit on the mash daily during the first week.

Place hardware cloth in the corners.

DON'T OVERHEAT THE POULTS. SEE TO IT THAT THEY ARE COMFORTABLE, AND THAT THE ROOM IS WELL VENTILATED.

ROOSTS—Roosts of the step-ladder type should be hinged to the wall for convenience in cleaning. Let them down when the poults are two weeks old. After the brooder stove has been removed and the poults get larger it may be necessary to provide extra roosts elsewhere in the room.

LITTER—Clean, sharp sand makes the best and cheapest litter. Only a small amount need be used. The brooder house should be cleaned daily until the poults go on the range.

NIGHT LIGHTING—A small (5-Watt) bulb or dimmed lantern suspended over the brooder stove causes the poults to spread out better when bedded down for the night. The light should be kept going as long as the poults are in the brooder house. Turkeys are often frightened by night noises and will go into a huddle, which causes losses, unless they are provided with a light.

GRIT—Grit is more essential to turkeys than to chicks. They must be amply supplied with hard granite grit. When the poults are two weeks old, change from baby chick size to intermediate chick size grit. When they are four weeks old, change to hen size grit. If procurable, turkey size grit should be provided when they go on the range.

GREEN FOOD—Turkeys are voracious eaters of green food. This can be provided in the most satisfactory and economical way by keeping a hopper full of GRANDIN'S GREEN FEED before them from the time that they are large enough to eat from the hoppers on the outside of the sun porch, until such time as they go on range.

SANITATION—A rigid program of sanitation should be carried out in growing turkeys. Water fountains and pans should be scrubbed daily. Their feed should be clean and fresh. The brooder houses should be kept **clean**. The spots on the range where the turkeys congregate most frequently should be raked weekly with a fine-toothed lawn rake.

WHEN TO CHANGE MASHES—When the poults are ten weeks old change from GRANDIN'S TURKEY STARTER to GRANDIN'S TURKEY GROWER.

HARD GRAINS—When the poults are ten days old sprinkle a small amount of GRANDIN'S BABY CHICK GRAINS on the mash daily until they are large enough to eat from the outside feeders. Then feed GRANDIN'S INTERMEDIATE CHICK GRAINS on top of the mash until they are five



Turkeys on range at THE GRANDIN DEMONSTRATION FARM.

weeks old. From that time until they go on range a hopper should be provided in which a half and half mixture of GRANDIN'S SCRATCH GRAINS and poultry oats is to be found at all times.

ON THE RANGE—Turkeys should be placed on a clean, well drained, and well grassed range when ten or twelve weeks old (250 to an acre). If the grass is tall it should be mowed. Five grille top feeders (hen size) should be provided for each one hundred and twenty-five turkeys. Three of them should be filled with GRANDIN'S TURKEY GROWER, one with poultry oats and one with GRANDIN'S SCRATCH GRAINS. When the turkeys are sixteen weeks old the GRANDIN'S SCRATCH GRAINS should be replaced by GRANDIN'S TURKEY FINISHING MASH. Four weeks before the turkeys are marketed one hopper of GRANDIN'S TURKEY GROWER should be replaced with whole corn.



This turkey range at THE GRANDIN DEMONSTRATION FARM has been used four years in succession. It has been managed as we advise. When the grass is mowed it will again be a clean, sanitary range. There are no bare spots.

The GRANDIN WAY
is the CHEAPEST and BEST WAY
to raise the plump, sweet flavored turkeys
that bring
THE TOP MARKET PRICE.



When you drive your **GRANDIN** fed turkeys in for slaughter you know that you are going to "cash in" on your labor and investment.



These were the first ten toms dressed. No selection was made for a picture. The owner made a net profit of \$2.06 per bird from his entire flock. The mortality was 6%. He fed **GRANDIN'S**.

POULTRY DISEASES

In this edition of SIMPLIFIED POULTRY KEEPING we are not going to take up the subject of poultry diseases, the details of symptoms and treatment, etc. A large volume would be required to effectively cover the field of poultry diseases. Then too, information on this subject given today may be obsolete three months hence so rapid is the advancement of science in this field.

The best advice that we can give a poultryman is to keep a watchful eye on his flock. Don't let disease "get the drop" on you. At the first sign of trouble, in case it is something with which you are not able to deal, get in touch immediately with your grain dealer. He will call for the service man of the feed company whose products you are using. Your county agent and state pathologist are always glad to be of assistance. Delays in cases of this sort are liable to be very expensive.

In spite of the fact that science has made great strides in the field of preventive medicines (vaccines) and in the discovery of new drugs and new formulas for the treatment of poultry diseases, **poultry mortality has increased tremendously.** The blame for this condition of affairs rests with the poultrymen.

The laws of Nature are inexorable. **When we disobey, the penalty must, and will be paid.** Poultrymen today are paying a heavy penalty for crowding both in the house and on the land, for using too few old birds, rightly handled, in their breeding programs, and for too much forcing in their feeding schedules.

We present to poultrymen in this booklet a system of feeding and a program of management (**THE GRANDIN WAY**) which we **know** will help in the solution of their disease problem and enable them to make a **reasonable profit year in and year out.**

THE GRANDIN DEMONSTRATION FARM

We would not feel competent to talk with poultrymen about problems of management, or to offer advice unless we had been confronted by the same problems which they must face.

Our business would not have steadily progressed so many years had we not been keenly alive to the fact that science is making progress in the field of poultry nutrition.

The GRANDIN DEMONSTRATION FARM, located at Kennebunkport, Maine, is our proving ground. Here our feeds and the methods of management which we advocate must prove themselves under ordinary working conditions. No more money is invested in buildings and equipment than is justified by good business acumen. **We want to know how money can be made with poultry.** We want to assure ourselves that no better feeds can be made than GRANDIN'S.

Visit with us any day in the week. We will be glad to see you.

LET'S TALK ABOUT FEEDS

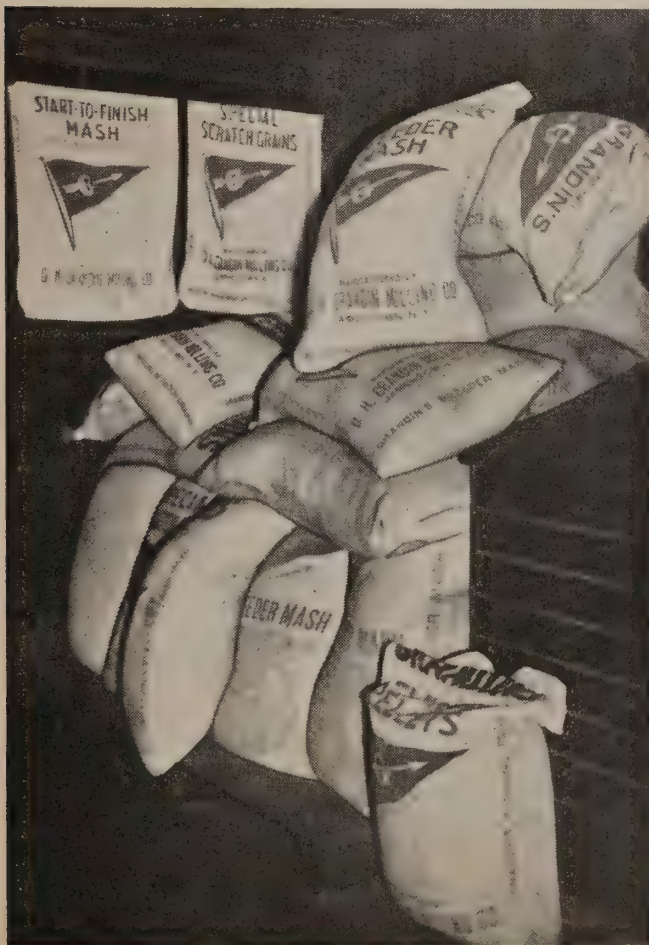
The dissemination of information on the subject of feeds by the U. S. Department of Agriculture, State Colleges, Poultry Magazines and Feed Trade Journals, has been so extensive in recent years that there are few poultrymen today who do not know how little the analysis on a bag of feed means. They know that the law requires that it should be there, as well as the list of ingredients. They know, also, that unless **everyone** of those ingredients is of the highest quality—clean and fresh, no feed can be **right**, regardless of the formula used.

The quality of the ingredients which enter into the composition of GRANDIN'S POULTRY FEEDS is constantly checked. Besides that, actual feeding tests are made in order that we may assure ourselves that our formulas are right.

At no time are GRANDIN'S POULTRY FEEDS cheapened. The price may change owing to variations in the price of certain ingredients, but the quality of **every** ingredient is maintained. **We buy the best.**

Changes in formulas are made **only** when we have satisfied ourselves that there has been a resultant improvement by so doing.

We have never attempted to influence poultrymen to expect impossible, and unreasonable, results from GRANDIN'S POULTRY FEEDS. We say, fairly and squarely, that poultrymen may rightly expect from GRANDIN'S POULTRY FEEDS **all** that can be **reasonably** expected of feeds that are always clean, rightly balanced, and composed of the highest quality ingredients that the market affords.



A CORNER IN
THE GRAIN ROOM
OF A
SUCCESSFUL
POULTRYMAN

GRANDIN'S START-TO-FINISH MASH

IS AN

OUTSTANDING FEED

FOR

OUTSTANDING POULTRYMEN

GUARANTEED ANALYSIS

Protein (minimum)	16%
Fat (minimum)	4%
Fiber (maximum)	7%
Carbohydrates	58%

INGREDIENTS:

Fortified Cod Liver Oil, Dried Buttermilk, Dried Whey, Meat Scraps, Fish Meal, Soybean Oil Meal, Corn Gluten Feed, Dehydrated Alfalfa Leaf Meal, Wheat Bran, Wheat Middlings, Ground Wheat, Ground Yellow Corn, Hominy Feed, Pulverized Oats, Ground Barley, Calcium Carbonate, Salt, Potassium Iodide and Manganese Sulfate.

GRANDIN'S START-TO-FINISH MASH is a combined **Starting Mash**, **Growing Mash**, and **Laying Mash**. NO CHANGE IN MASH FEEDING NEED BE MADE FROM THE TIME THAT THE CHICKS ARE PLACED UNDER THE BROODER STOVE UNTIL THE TIME COMES TO DISPOSE OF THEM. There is only **one mash** to buy. The problem of **when and how to change mashes is eliminated**.

Chicks that are grown on GRANDIN'S START-TO-FINISH MASH are sturdy and well feathered. **Their growth is not forced. It is normal.**

IN THE LAYING HOUSE PRODUCTION WILL BE COMMENSURATE WITH THE BREEDING AND MANAGEMENT OF THE FLOCK.

GRANDIN'S START-TO-FINISH MASH is NOT A SO-CALLED "COMPLETE RATION". Hard grains should be fed in connection with it as advised on page 25 of this booklet, on page 9 under the heading PROBLEMS OF THE RANGE and on page 15 under the title PROBLEMS OF THE LAYING HOUSE.

Don't hesitate about starting your chicks on GRANDIN'S START-TO-FINISH MASH and carrying them through the growing and production periods on it. **THE RESULT WILL SATISFY YOU IN DOLLARS AND CENTS.**

GRANDIN'S START-TO-FINISH MASH embodies **the last word** of the scientist in poultry nutrition, substantiated by exhaustive feeding tests.



FROM THE START



TO THE FINISH 



GRANDIN'S BREEDER MASH

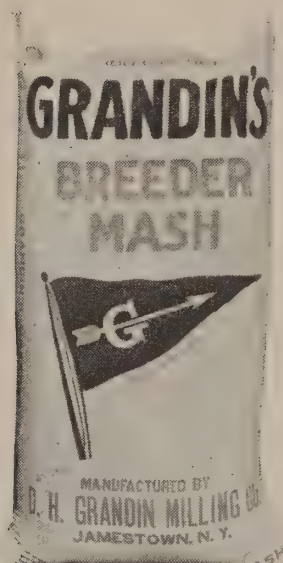
WHY DO WE NEED A BREEDER MASH?

Research work has clearly proved that diet has a direct connection with hatchability, that certain materials, especially those containing vitamins A, D and G, must be more abundantly used (but not too abundantly) in the composition of a BREEDER MASH than a mash that is designed solely for egg production.

While it is true that vigorous, well selected breeders will lay eggs of fairly high fertility and hatchability when fed regular rations, it is also true that those same breeders will do **better** when fed a BREEDER MASH, because they are being supplied with THE SPECIALLY BALANCED MATERIALS TO DO A SPECIAL JOB. To lay an egg for table consumption is PRODUCTION, to lay an egg for the incubator is REPRODUCTION.

In GRANDIN'S BREEDER MASH we are passing on to poultrymen the results of the most recent findings of the scientist in the field of poultry nutrition, corroborated by our own tests.

We realize fully the place that a breeder mash fills in the modern poultry program. That's why we have seen to it that GRANDIN'S BREEDER MASH is second to none.



YOU WON'T FALL
DOWN IN YOUR BREEDING
PROGRAM IF YOU FEED

GRANDIN'S BREEDER MASH

(Available in Pellet Form)





GRANDIN'S BROILER MASH

GRANDIN'S BROILER MASH is a distinctly one-purpose mash. The nature and balance of the ingredients work together to a **single** and **definite** end—the production of **fancy** broilers.

GRANDIN'S BROILER MASH produces solid plump broilers with heavy feathering and bright pigmentation. In short, it produces the kind of broilers demanded by the buyer who can, and will, pay a good price for the birds that fulfill his requirements.

FEEDING DIRECTIONS (BROILERS)

Excellent broilers may be raised at less expense when the chicks are fed GRANDIN'S START-TO-FINISH MASH during the first six weeks. Hard grains should be fed in accordance with the practical feeding program to be found on page 25.

At the beginning of the seventh week, GRANDIN'S BROILER MASH should replace GRANDIN'S START-TO-FINISH MASH. Cracked yellow corn should be fed night and morning in such quantities as the chicks will consume within a period of one-half hour.

PROVIDE GRIT.

DON'T CROWD.

Feed GRANDIN'S GREEN FEED as directed in the feeding program to be found on page 25.

The specialist in broiler production who prefers to use **one** mash will find that "top-notch" broilers are produced when the chicks are fed GRANDIN'S BROILER MASH all the way through.

GRANDIN'S BABY CHICK GRAINS should be fed during the first four weeks. During the next four weeks, cracked yellow corn (intermediate size) should be fed. From that time on, cracked yellow corn (full size) should be fed as directed above.

FEEDING DIRECTIONS (ROASTING CHICKENS)

In case a poultryman desires to raise **fancy** roasting chickens, the cockerels should be fed GRANDIN'S START-TO-FINISH MASH until they are twelve weeks old. At that time it should be replaced with GRANDIN'S BROILER MASH. Cracked yellow corn should be fed as directed for broilers that are raised entirely on GRANDIN'S BROILER MASH.

DON'T CROWD.

GRANDIN'S CHICK STARTING MASH

GRANDIN'S CHICK STARTING MASH is composed of high grade ingredients, so balanced as to enable chicks to get a **right** start in life. There are other feeds that will make chicks grow faster for a period of six weeks, but the best story can be told at the end of six months by the GRANDIN user. Chicks that are fed GRANDIN'S CHICK STARTING MASH make **normal sturdy** growth and are well feathered. Follow **THE GRANDIN WAY** of feeding and management.

GRANDIN'S GROWING MASH

Above all things else to be desired in the development of a pullet is a strong, rugged frame. That's just one of the things that is very noticeable about the chicks grown on GRANDIN'S GROWING MASH.

GRANDIN'S GROWING MASH is not a forcing mash. It does not bring the pullets to productive maturity too soon. It develops their bodies naturally and insures them the size and vitality essential for continued production. Follow **THE GRANDIN WAY** of feeding and management.

GRANDIN'S LAYING MASH

GRANDIN'S LAYING MASH is the last link in the chain of the GRANDIN THREE-MASH SYSTEM OF FEEDING. Like the other links, it is strong. The whole chain will stand the severest tests.

In GRANDIN'S LAYING MASH we manufacture a feed which fulfills the needs of layers. **It does not force production.** It enables them to lay **steadily**. During the year they will lay every egg that their breeding and care will warrant. Feed and manage your layers a year **THE GRANDIN WAY**. At the end, you will have satisfied yourself that you are using a mash that stands the test of time.

GRANDIN'S LAYING MASH IS AVAILABLE IN PELLET FORM.

WE MAKE EVERY EFFORT POSSIBLE TO MANUFACTURE **FIRST CLASS FEEDS** AND ADVOCATE THOSE METHODS OF POULTRY MANAGEMENT WHICH ARE **PROFITABLE IN THE LONG RUN**.

GRANDIN'S GREEN FEED

INGREDIENTS

Fine Quality Shredded Alfalfa,
Dried Beet Pulp,
Cane Molasses

GRANDIN'S GREEN FEED supplies at a very low cost the bulk which is necessary to enable chicks and layers to make the best use of the concentrates furnished them in the form of mashes. Beside that, it is an added source of Vitamins A and G. The slight laxative effect of the molasses helps to keep the birds in excellent condition.

Pullets that have had access to **GRANDIN'S GREEN FEED** as directed on page 25 of this booklet will, when brought in from the range, eat it readily. The change is abrupt. They miss the roughage of the range. **GRANDIN'S GREEN FEED** satisfies their natural craving. **There will be no danger of feather pulling, or cannibalism.**

GRANDIN'S GREEN FEED does not upset the balance of the mash. Our tests indicate clearly that production is not lessened by the feeding of **GRANDIN'S GREEN FEED**, while livability is increased and the general flock condition decidedly improved.

GRANDIN'S FLESHING PELLETS

GRANDIN'S FLESHING PELLETS accomplish all that the name implies. The poultryman who would like to do away with the tiresome and dirty job of wet mashing his birds can do so, if he feeds **GRANDIN'S FLESHING PELLETS** at noon, as we direct, and manages his flock **THE GRANDIN WAY**.

GRANDIN'S BABY CHICK GRAINS

GRANDIN'S BABY CHICK GRAINS are composed of high grade—finely cracked wheat, cracked yellow corn, and a liberal amount of steel cut oat groats. **They are clean and free from dust.**

GRANDIN'S INTERMEDIATE CHICK GRAINS

GRANDIN'S INTERMEDIATE CHICK GRAINS are composed of only three ingredients—cracked yellow corn, high grade wheat and oat groats. Compare them with others for grade and cleanliness.

GRANDIN'S SCRATCH GRAINS

Poultrymen who feed **GRANDIN'S SCRATCH GRAINS** find that owing to the **cleanliness, variety**, and high quality of the grains of which it is composed that it economically supplies the balance needed to keep birds in good flesh, good health and continued production.

GRANDIN'S SPECIAL SCRATCH GRAINS

Poultrymen who believe that heavy oats fill an important place in the feeding program will be well pleased with this mixture. It is composed of **high grade clean** grains and the price is always reasonable.

GRANDIN'S SPECIAL SCRATCH GRAINS were specifically designed to meet the requirements of commercial poultrymen.

GRANDIN'S TURKEY STARTER

We have good reason to be proud of our accomplishment in producing GRANDIN'S TURKEY STARTER. It is a feed which produces **REAL** results. The remainder of the program is "up to" the turkey raiser. If he follows **THE GRANDIN WAY** of management he will come through "with flying colors".

GRANDIN'S TURKEY STARTER satisfied the poults. You will not hear them "yip" as they do when their feed does not fully satisfy them. You will be pleased with their smoothness and close feathering.

GRANDIN'S TURKEY GROWER

In GRANDIN'S TURKEY GROWER we have developed a mash which will satisfy the most exacting turkey raiser. No mash will accomplish more in the structural development of turkeys. At the same time they are always in good flesh. We feel confident that we have "hit the nail on the head" as far as turkey feeds are concerned.

GRANDIN'S TURKEY GROWER IS AVAILABLE IN PELLET FORM.

GRANDIN'S TURKEY BREEDER MASH

There are certain essential food requirements of turkeys which we have not overlooked in the manufacturing of GRANDIN'S TURKEY BREEDER MASH. No turkey breeder mash will accomplish more than GRANDIN'S. Breeders that are properly selected and handled will produce the kind of poults that the honest turkey raiser likes to sell and the kind that it pays him to raise.

Breeders should be fed GRANDIN'S TURKEY GROWER until a month before eggs are to be used for hatching.

GRANDIN'S TURKEY BREEDER MASH IS AVAILABLE IN PELLET FORM.

GRANDIN'S TURKEY FINISHING MASH

Every turkey raiser aspires to produce as finely finished birds for market as "the other fellow". Those who feed and manage their flocks **THE GRANDIN WAY** have the kind of birds to sell that find a place in the high price class.

GRANDIN'S TURKEY FINISHING MASH produces plump turkeys with solid flesh. **They are really finished.**

Directions for feeding GRANDIN'S TURKEY FINISHING MASH will be found on page 30 under the heading **ON THE RANGE**.

GRANDIN'S TURKEY FINISHING MASH IS AVAILABLE IN PELLET FORM.

IT IS QUITE POSSIBLE THAT IN THE FOREGOING PAGES WE HAVE NOT DEALT WITH SOME PARTICULAR SUBJECT RELATED TO POULTRY KEEPING ON WHICH YOU WOULD LIKE TO HAVE OUR VIEWS. IT MAY BE, ALSO, THAT WE HAVE OMITTED SOME DETAILS IN THE TREATMENT OF A SUBJECT TAKEN UP IN THIS BOOKLET. IN EITHER CASE, WE WOULD BE PLEASED TO HAVE YOU WRITE TO US FOR INFORMATION. WE WILL GLADLY COMPLY WITH YOUR REQUEST.

Communications Should Be Addressed To

POULTRY SERVICE DEPT.

D. H. GRANDIN MILLING COMPANY

JAMESTOWN, NEW YORK

OUR POULTRY SERVICE DEPARTMENT IS MAINTAINED WITH THE DISTINCT PURPOSE OF HELPING OUR CUSTOMERS TO "GET ON". WE HAVE PRACTICAL FIELD MEN IN OUR EMPLOY. WE WANT OUR CUSTOMERS TO FEEL FREE TO ASK FOR AID OR ADVICE FROM THE ONE NEAREST AT ANY TIME. YOUR GRAIN DEALER WILL HELP YOU TO GET IN TOUCH WITH HIM.

GRANDIN'S DAIRY AND STOCK FEEDS are in the same class with
GRANDIN'S POULTRY FEEDS — THE FIRST CLASS.



The Mark of Quality